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written standards and procedures covering documentation practices. The enforcement of the documentation standards recently published by MSD should help to alleviate many of the problems currently being experienced in connection with changing and upgrading programs, and should serve to improve the future efficiency and productivity of the division.

10. Comments made by MSD customers concerning MSD services are discussed later in the section Customer Attitudes and Problems.

11. Support Information Processing System (SIP3) - The SIP3 program entails updating all of the existing support systems and making use of advanced computer technology to increase the range and improve the quality of support information services. Benefits expected from SIP3 include: more complete, responsive, and timely data for general management purposes for use of the Support Directorate and other Agency components in carrying out their personnel, security, budgetary, custodial, accounting, and general administrative functions; reduction in redundant data and the manual processes associated with the recordkeeping, filing, and manipulation of support data; and reduction in machine time presently required to run these first- and second-generation programs in emulation on third-generation equipment.

12. The need to update and improve the support systems was recognized by both DDS and OCS several years ago, and led to the

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establishment of the SIPS program. The SIPS analysis and design work began in 1964 under the direction of the DDS Information Processing Coordinator. The SIPS Group has been composed at various times of from 20 to 40 officers detailed from the Offices of Personnel, Logistics, Finance, and other components of DDS, with limited advisory support from OCS. The group continued developmental work on this activity until 7 November 1968. At that time the DDS and DD/S&T reached an agreement, approved by the Executive Director-Comptroller, to establish a SIPS Task Force. The Force was formed under the Chief, MSD/OCS and was composed of the DDS SIPS Group and all of the personnel of MSD/OCS not otherwise committed to ongoing ADP programs. A reassessment of the SIPS plan was made at that time, with the result that the number of sub-systems previously planned for under the three major groupings was reduced, certain design features were changed, design phases and priorities were established, and plans were altered to provide for the phased implementation of each of the systems or sub-systems rather than the simultaneous implementation of the whole SIPS program.

13. The present SIPS plan envisages the design and implementation of ten major ADP systems, with approximately 40 sub-systems, which will be put together to form an integrated information system for use in managing and accounting for the Agency's human, financial, and materiel resources. The ten major systems are:

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Human Resources Systems

- (1) Manpower Control
- (2) Staffing Complement
- (3) Skills Inventory
- (4) Automated Name Checking (SANCA)
- (5) Special Clearances (SPECLE)
- (6) Pre-Employment Processes

Financial Resources System

- (7) Agency Payroll
- (8) General Accounting
- (9) Budget Processes

Material Resources System

- (10) Material Resources

14. According to the SIPS plan, the developmental tasks which must be completed prior to implementation of each major system has been divided into four phases, as follows:

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|-----------|--------------------------------------|
| Phase I | Requirements Collection |
| Phase II | Requirements Analysis |
| Phase III | Systems Design |
| Phase IV | Programming, Testing, Implementation |

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Each of the four main tasks is further subdivided into specific subphases to establish benchmarks for measuring progress.

15. Phase I, Requirements Collection, has been completed for all of the ten major systems, and Phase II, Requirements Analysis, is considered to have been substantially completed on all major systems except the Materiel Resources System. The present effort is concentrated primarily upon Phase III, Systems Design, which involves firming up the design parameters of each system, preparing function flow charts for each process, devising information input and output specifications, establishing performance requirements, and organizing file structures. The target dates established for completion of Phase III, design stage, and Phase IV, implementation, are set forth below:

TARGET DATES

System Task	4qtr 1969	1qtr 1970	2qtr 1970	3qtr 1970	4qtr 1970	1qtr 1971	2qtr 1971	3qtr 1971	4qtr 1971	1qtr 1972
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Manpower Control
System

Phase III
Phase IV

SANCA

Phase IV
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SPECIE

Phase III
Phase IV

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TARGET DATES

	1Qtr 1969	1Qtr 1970	2Qtr 1970	3Qtr 1970	4Qtr 1970	1Qtr 1971	2Qtr 1971	3Qtr 1971	4Qtr 1971	1Qtr 1972
<u>System Task</u>										

Staffing Complement

Phase III

Phase IV

Skills Inventory

Phase III

Phase IV

Pre-Employment Processes

Phase III

Phase IV

(No firm target date for implementation)

General Accounting

Phase III

Phase IV

Agency Payroll

Phase III

Phase IV

Budget Processes

Phase IV

Material Resources

Phase II

Phase III

Phase IV

16. There are several very persuasive reasons, from the standpoint of utilization of Agency resources, why the SIPS effort should

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be accorded a high priority and why everything practical should be done to maintain a steady rate of progress toward system completion. The overall cost of the SIPS effort is high and will continue to mount the longer it takes to implement the system. The cost of running the present on-going second generation systems in emulation on third generation equipment is also high and cannot be reduced until the systems are redesigned and programmed. The lack of flexibility and poor documentation of the present on-going systems also represent a hazard, because changing regulatory or legal requirements could result in a breakdown of parts of the present systems or make them prohibitively expensive to operate. A large number of people in the DDC and throughout the Agency must spend a considerable amount of time in manipulating the administrative data required by present procedures and practices. Many of these processes will be significantly improved and presumably the number of people doing them reduced as new procedures are introduced. Steady progress is also essential for maintaining the morale of the SIPS Task Force employees. All of these points argue for an early firming up of the systems design phase and an aggressive push forward for the activation of the various sub-systems.

17. The formation of the SIPS Task Force, the provision for access to the Assistant Director for Support for management decisions, and the placement of all of the people working on the SIPS effort in

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one physical location have had a beneficial effect. The DDS functional specialists and the OCS systems experts can now work together as a team and can direct all their efforts toward the solution of the many complex problems involved. The quality of staff and developmental work and access to high-level management have improved and expedited decision-making. The cutback in the number of sub-systems and the modification of some overly-sophisticated plans for on-line interactive services and for the total integration of all data associated with this project have resulted in more realistic work plans and firmer user requirements.

18. There are still many problems that lie ahead before the SIPS Program is completed. The rate at which these problems are solved will depend to a large extent upon the degree of priority which can be assigned to this project by DDS and OCS. The first step is to establish firm design parameters of the major ADP systems. This requires positive decisions on the part of both users and designers. In addition, early and positive decisions must be made as to which of the various sub-systems will operate in a batch mode, and which will require on-line interactive services. The procedures, file structures, equipment, and software required for on-line services are quite different from that required for batch operations. Extensive testing and revision of customer input procedures and processing cycles will be necessary in those cases where on-line systems or

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sub-systems are required. Another prerequisite to programming this activity is the need for the standardization of data elements and codes. This job is essential if the system is to be integrated to the extent that single data inputs are to be transmitted between and utilized by the various systems and sub-systems. When the above design features are firmed up, the priority given the level and quality of programmer support will determine the pace at which progress is made. During this same period, however, the DDS components must devise and firm up input procedures, make plans for the utilization of the outputs, and arrange for the required training of their staffs if the new procedures are to be implemented effectively. OCS must also be prepared to handle the problem of scheduling computer time and assigning personnel needed to run the old and new applications in parallel while testing and debugging the system.

19. The Task Force leader and the various group leaders now working on the SIP3 activity appear confident that they are on the right track, and that they can successfully implement this system in an incremental fashion as presently planned. If the system development becomes bottlenecked, however, further cutbacks on integration of data or on deferment of on-line facilities may be necessary in order to achieve faster progress.

20. Discussions with SIP3 Employees - We received a variety of reactions and opinions in talking with the OCS and DDS employees

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working on the SIPS Program. The group leaders and branch chiefs seemed encouraged by the progress being made since the formation of the Task Force. They were cautiously optimistic about future progress and felt that present target dates for implementation of the major systems could be met, provided continued access to high levels of DDS management could be maintained to ensure timely decisions in respect to users' final systems design requirements.

21. Although most of the SIPS employees were very critical of the way in which the program had been managed in the past, they seemed to feel that the present "mix" of skills and talents has improved the quality of analysis and planning. Some, however, think that the present "mix" of personnel skills is not in proper balance. Those individuals feel that there are still too few ADP-oriented systems analysts and too many functional specialists and junior programmers assigned to the SIPS Task Force.

22. A number of the DDS detailees to SIPS display a keen interest in the potentialities of ADP, like the type of work they are doing, and feel that the skills and experience they are acquiring as members of the SIPS Task Group will enhance their value to their parent Career Service and increase their opportunities for career advancement. There is a low morale among other DDS detailees, however. These individuals feel estranged from their parent Career Services and think they are not in the mainstream of consideration for promotions.

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and reassignment opportunities. They have all been assured that they are considered along with all others of their service for promotion and reassignment, and it has been pointed out to them that a number of SIPS detailees have been promoted. Some of them, however, remain unconvinced and feel "trapped" in a situation they cannot get out of until the SIPS task objectives are completed, and some are still doubtful that the tasks will be completed as scheduled. A number of them, detailed to what they thought would be a one- to two-year assignment, have been working on the SIPS Program for four or five years and are depressed and discouraged by the prospect that they may have to spend two or three more years on work for which they do not feel particularly well suited or qualified. There is no easy solution to this difficult problem. The feeling that they are "trapped" tends to lower the efficiency and productivity of these employees. On the other hand, any large-scale rotation of the SIPS Group would have a serious adverse effect on the Program by requiring the training of replacements.

Recommendation No. 3

That the Director of the SIPS Task Force and the heads of the DDS Career Services concerned arrange for counseling with each DDS detailee with a view to assuring the best possible long-range utilization of the individual, both from his standpoint and that of the Agency.